DETROIT MASTER PLAN

DETROIT CITY PLAN COMMISSION
CITY OF DETROIT

PLANS FOR A FINER CITY...
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TRAFFICWAYS

STATUS—Trafficways plans for the City of Detroit were prepared jointly by the Traffic Engineering Bureau, the Department of Public Works and the City Plan Commission, and were approved in principle by the State Highway Department and Wayne County Road Commission. The plans were described in The Proposed System of Trafficways, *published by the City Plan Commission in December, 1946. They were subsequently adopted by the Mayor and the Common Council as part of the Master Plan on April 1, 1947.*

Routes of the John Lodge and Edsel Ford Expressways have been precised, and working agreements for their construction are being negotiated with the Wayne County Road Commission, the Michigan State Highway Department, and the United States Bureau of Public Roads.

COORDINATED SYSTEM *Trafficways*

Function of the System

The trafficways plan is a plan for location and improvement of arterial highways and thoroughfares to permit freer flow of urban traffic within and through the city. It is intended to inter-connect the principal commercial and industrial concentrations with the residential neighborhoods and communities of the metropolitan area.

The trafficways system as shown in the Master Plan includes routes for limited access expressways; a network of major and secondary thoroughfares, consisting principally of existing surface streets, some of which need widening or extension to increase their traffic capacity; and locations of additional railroad grade separations.

The plan recommends standards for each type of traffic facility, and shows where widenings, openings and improvements to the present system are needed.

The trafficways plan is a comprehensive co-ordinated system which is a long term basis for highway improvements. It does not include local service and feeder streets whose design is determined by the local area to be served.

Explanation of the Terms

Expressways are highways especially designed for carrying an uninterrupted flow of through traffic. They are distinguished from other arteries by the following three design features: (1) access limited to a relatively small number of specially designed points of entrance and exit; (2) continuous physical separation of opposing directions of traffic; (3) separation of grades at all intersections.

According to the nomenclature standards adopted by the American Association of State Highway Officials on June 25, 1949, the type of highway designated as an *expressway* in Detroit is known as a *freeway*.

Major thoroughfares are the principal surface streets. Access is not limited, but special attention is given to the safe and expeditious movement of through traffic.

The major thoroughfare network consists of 107 miles of street which should have six lanes for moving traffic and two lanes for parking, and 189 miles of streets which should have four lanes for moving traffic.

In order to meet the requirements of safety and convenience, major thoroughfares should have a central dividing strip wide enough to protect pedestrians, and to facilitate left turns and cross traffic.

The network of major thoroughfares consists principally of existing streets: six radial routes and a gridiron system of roads spaced about one mile apart. These are generally existing routes some of which have been improved under the plan of thoroughfares of 1925.

Secondary thoroughfares are shorter or less continuous surface streets on which special attention is given to the safe and expeditious movement of through traffic. They are frequently the routes for feeder transit lines. Some pleasure drives and parkways not intended to carry commercial traffic are included as secondary thoroughfares in the Master Plan.

Secondary thoroughfares generally require a single roadway with two or four moving lanes. The network of secondary thoroughfares consists principally of existing streets.

Interim thoroughfares are certain streets now carrying heavy traffic which may be relieved by construction of expressways and improvement of thoroughfares. These streets are considered as temporary thoroughfare routes until heavy traffic can be diverted from them.

Relation to Other Elements of the Master Plan

The present trafficways plan has the advantage over the previous thoroughfare plans that it has been co-ordinated with and made part of a comprehensive plan for land use and public facility locations.

With an accepted land use plan it has been possible to locate traffic arteries with full knowledge of whether they will be passing through industrial or residential areas, and some indication of the probable intensity of that development. Expressways and thoroughfares have been routed where they can be of maximum usefulness as trafficways, and incidentally benefit rather than blight the property adjacent to them.

While the expressways are designed primarily as high speed routes to interconnect the communities of the metropolitan area, they have the incidental characteristic of being landscaped strips approximately 300 feet wide with relatively few crossings for pedestrian and local automobile traffic. Fully recognized, this characteristic will be an asset to the sections which the expressways pass through. Routing of expressways at the borders of communities, or between residential and industrial areas has frequently served the purpose of providing useful separations or buffers. At the same time, routing of expressways through residential communities in such a way that schools, shopping centers, or public facilities would be cut off from their service areas has been avoided whenever possible. Where these routings are found necessary, it is recommended that any such effect should be minimized by construction of sufficient foot and vehicular bridges.

Because of the desirability of keeping through traffic out of residential neighborhoods where children must walk from home to schools and playgrounds, major thoroughfares have been used generally as bounding streets for the neighborhoods. In a few neighborhoods where peculiarities of the thoroughfare system break the neighborhoods into two portions separated by a thoroughfare, it is recognized that special crossing and safety devices must be employed.

Explanation of the Map

The map on the opposite page shows the composite system of trafficways with all permanent portions of the system in solid red lines. Types of thoroughfares are distinguished by the weight of the line.

Heaviest lines indicate expressways; two medium weights of lines indicate six and eight lane major thoroughfares; and light lines represent secondary thoroughfares. Broken lines indicate interim thoroughfares now in use, subject to modification when the system of expressways and thoroughfares is in operation.

CROSS SECTION STANDARDS *Trafficways*

Expressways

Expressways are designed generally to carry *three moving lanes* in each direction. Since no parking or loading are permitted on these lanes, there must be a margin of approximately ten feet for emergency stops for disabled cars.

The expressway *center mall* serves two purposes: to separate the opposing lines of traffic and to provide a reserve of space for rapid transit facilities if they are needed. A full sixty foot center mall is recommended under the Master Plan for expressway routes where rail transit lines are to be located. When there is no need for the transit facilities, a fourteen foot mall is adequate.

Expressways through developed urban areas must generally be *depressed or elevated* to facilitate separation of grades from local streets or thoroughfares. Depressed ways are preferred through residential and commercial areas because they create no visual obstructions, are less noisy, and have some advantages in ramping. Since the entering ramps are downgrade, they accelerate incoming traffic while up-grade ramps help to decelerate traffic leaving the expressway. Through industrial areas where the wider right of way for depressed construction is difficult to secure, elevated construction is permissible.

Because of the fact that expressways are meant for through traffic only, ramps for entering or leaving the expressway should not be spaced too frequently. Ramps should lead as directly as possible to major thoroughfares which are normally at one-mile intervals. Ramps should not be connected with local streets which would tend to disperse traffic through adjacent neighborhoods. Where ramps must come to the surface at a considerable distance from thoroughfares, the ramps should be extended to the thoroughfares by means of a *service* or *access* road.

Standard Widths for Component Parts of Expressway Cross Section

Total Right-of-Way	*Feet*
3 lanes in each direction	300 to 350
Lanes and Roadway, total each direction	
3 lanes in each direction	46
Each moving lane	12
Margin for emergency stops	10
Center Mall	
Total to divide traffic	14
Slopes	
To maintain maximum slope at 1 to 2	25 to 50
Variable in accordance with elevation.	
Service Drives, Sidewalks and Margins	
Total width each side where service drive is necessary	53
Each moving lane	15
Margin on left side	8
Margin on right side including sidewalk	15

Major Thoroughfares

A full standard right-of-way width for a *major thoroughfare* is 138 feet. While some thoroughfares have right-of-way equal to or greater than this width, other existing portions of the system have right-of-ways of 60 feet, 66 feet, 86 feet, 100 feet or 120 feet. Since wholesale widenings to the full standard width would be prohibitive in cost, especially in built-up areas, the relative traffic requirements and local conditions have been studied to determine where the width can be reduced without seriously impairing the efficiency of the system.

The major thoroughfare within the right-of-way consists of moving lanes, parking lanes, center island, sidewalks and margin. Desirable widths for these parts are as follows:

Standard Widths for Component Parts of Major Thoroughfares

Total Right-of-Way	*Feet*
6 lane	138
4 lane	116
Lanes and Roadway	
3 lane	44
2 lane	33
First moving lane	13
Each additional moving lane	11
Parking lane	9
Center Island	
Total to divide traffic, protect pedestrians and facilitate left turns	
At signals	16
At other crossings	20
To protect pedestrians	10
To protect crossing movements	20
Streetcar operation	30
Sidewalks and Margin	
Total sidewalk and margin	15
Sidewalk in residential or light industrial	6
Sidewalk in business or heavy industrial	15

Since the width of each component is determined by operating needs, reduction in right-of-way must generally be achieved by eliminating some functional part such as the center island or parking lane rather than in reduction of the size of the traffic lanes.

On the basis of traffic requirements *major thoroughfares* have been divided into those which must carry *six lanes* of moving traffic and those which need only *four* moving *lanes*. Other reductions in overall width must be made by elimination of either the center island or curb parking. A 104 foot right-of-way, for example, will provide necessary width for six moving lanes if either the center island or parking lanes are eliminated. A 90 foot width will provide four moving lanes without a center island.

Reductions within these limits may be advisable because of existing buildings or platting, but the reductions must be made in such a way that necessary traffic carrying capacity is not impaired. It may be preferable, for example, to acquire parking space behind commercial buildings rather than to cut off the fronts merely to provide curb parking space.

Secondary Thoroughfares

Secondary thoroughfares will normally have two traffic lanes with parking on each side. Right of way width of 66 feet is sufficient for this purpose.

Explanation of the Standards

Cross section dimensions shown are desirable standards which may be adjusted when necessary to meet a reduced right-of-way width.

EXPRESSWAYS *Trafficways*

Objectives and Principles of Location

Expressways are limited accessways designed to carry a flow of traffic uninterrupted by cross streets, traffic signals, parking or turning movements.

The expressways are routed to serve three principal functions:

1. Provide radials connecting the central business district with outlying residential communities;
2. Carry interregional traffic across the city and provide cross connections between outlying industrial centers and residential communities;
3. Provide a downtown loop to collect and distribute traffic to the central business district and by-pass through traffic around the district.

Since urban expressways are eligible for state and federal assistance as interregional routes, the expressways system must be interconnected with main trunk lines outside the city.

Purposes Served by Expressways, By Type

The expressway plan consists of five radial routes to the central business district, five crosstown routes, a distributor loop around the central business district, and two outer branches.

Radial Routes

John C. Lodge expressway tieing into the James Couzens Highway at Wyoming. It will provide the residents of northwestern communities with a connection to the central business district.

Grand River route serving the central business district, Ambassador Bridge, Briggs Stadium, the Michigan Central station and northwest residential communities and connecting with US 16 to Lansing.

Hastings-Oakland route serving the central business district, the Milwaukee-Junction and Oakland Avenue industrial districts and the northern suburban communities.

West Fort route serving the Ambassador Bridge, Briggs Stadium, lower west side industries and connecting with the Detroit Industrial expressway outside the city.

East Vernor route serving the east side residential districts and lower Conner.

Crosstown Routes

Edsel Ford expressway extending the Detroit Industrial expressway through the city and northeasterly to Port Huron. It will serve the Ford Rouge Plant, Wayne University, and the Cultural Center, the New Center area, Milwaukee-Junction industrial area, the City airport, and St. Clair Beach.

Schoolcraft-Davison-McNichols-Conner route extending the Davison Expressway across town to the east side industrial area along Conner.

Eight Mile Road extending across the northern border of the city, and connecting with the Edsel Ford Expressway to Port Huron. It is proposed to be a modified expressway utilizing as much as possible the present 204 foot right of way.

Southfield Road extending north and south across the western part of the city connecting the downriver industrial district with the northwest residential communities. It is proposed to be a modified expressway utilizing as much as possible the present 204 foot right of way.

Telegraph Road is proposed to be a modified expressway along the present route of US 24 which is the main by-pass from Toledo to Pontiac along the western side of the city.

Mound Road extension connecting the Ford Expressway with Mound Road will serve the Mound Road industrial district.

Downtown Loop

The five radial routes terminate on three sides of the central business district: Lodge on the west; Fort, Grand River and Vernor on the north; and Hastings-Oakland on the east. So that the traffic entering the district may circulate freely around the district and enter the district close to its destination, the plan calls for completion of an expressway loop by a connection along Jefferson on the south side. The connection along Jefferson will be designed to serve two purposes:

1. Distribute and collect surface traffic to be fed into the Lodge and Hastings Expressways;
2. Permit easy flow of through traffic, as well as serving the Civic Center.

Status of the Expressways

The John Lodge and Edsel Ford expressways are under construction through joint agreements between the City of Detroit, Wayne County Road Commission, Michigan State Highway Department and the Federal Bureau of Public Roads.

Agreements for the extensions of the Ford and Lodge expressways are receiving the approval of local and state authorities. It is anticipated that construction of these extensions will be started in the near future under a bonding program recently authorized by state and federal legislation.

For the balance of the expressways needed, there is no financing program at the present time. The agencies responsible for highway planning have tentatively agreed on the following priorities for programming of future construction:

Grand River and Vernor—Berg Road to Hastings
Jefferson—Lodge to Hastings
Hastings—Jefferson to Woodward
Mound—Ford to Caniff

Explanation of the Map

The map on the opposite page shows the precise route of the expressways already under construction or programmed, and general routes for the remainder of the expressway system.

Routes under construction are shown in solid red lines; those definitely programmed in broken lines. More general routes are shown by lines of circles. These lines indicate general locations of routes satisfactory in terms of traffic need and present and future land use. More detailed studies of the engineering problems involved in these routes will be necessary before precise right-of-way can be shown.

MAJOR THOROUGHFARES *Trafficways*

Objectives and Principles of Location

The major thoroughfares plan is a network of surface streets designed to interconnect all business centers, industrial districts and residential neighborhoods. The network incorporates many features of the plan of thoroughfares of 1925.

The system consists of six radials which were the old Detroit's military roads: West Fort, Michigan, Grand River, Woodward, Gratiot, and East Jefferson; and a gridiron system of roads generally at one mile intervals.

Since the proposed expressway routes will be spaced at intervals several miles apart with access at one-half to one mile intervals, the expressways will serve primarily the traffic which is traveling considerable distances. Much of the traffic traveling only a few miles will use the surface street system. Consequently there will be a continuing need to maintain and improve the surface streets with capacity to carry traffic continuously for several miles.

In preparation of the thoroughfare plan, the present system has been studied primarily to determine what widenings and minor openings will promote a more efficient flow of traffic. The plan also indicates the interconnections which will be made necessary by the expressway system.

Status of the Major Thoroughfares

The thoroughfare plan consists of 296 miles of thoroughfares: 107 miles to carry six moving lanes and 189 miles to carry four moving lanes.

Most of the thoroughfare system is already in existence although portions fall below the standards of the Master Plan.

The Master Plan standards indicate a possible need for 132.5 miles of widenings and 9.3 miles of street openings to complete interconnections. Widenings and openings will be programmed as traffic loads show necessity and funds are available. Some routes under the jurisdiction of the State Highway Department and Wayne County Road Commission will be improved by these agencies.

Explanation of the Map

The map is intended to show what is considered a desirable right-of-way width. Heavy red lines indicate that a six-lane thoroughfare is desirable. A narrower red line indicates a four-lane standard.

Solid red lines indicate those portions of the thoroughfare system which are now in existence as part of the street system. Broken lines indicate proposed sections which will require opening new right-of-ways.

SECONDARY THOROUGHFARES *Trafficways*

Objectives and Principles of Location

Occasionally to provide a route for a transit line, or where there are special traffic conditions around an industrial or shopping center, it is necessary to have secondary or auxiliary thoroughfares.

In established residential areas, feeder transit lines are operated at intervals which bring lines within one-quarter mile walking distance of all homes. For this reason feeder lines are frequently operated over the half-mile roads running through the center of residential neighborhoods. Established shopping centers and industries are occasionally so located within a neighborhood that short thoroughfares are required to carry the generated traffic to a major thoroughfare.

Status of Secondary Thoroughfares

While it may be necessary for transit purposes to carry the secondary thoroughfares continuously through several neighborhoods, these thoroughfares should generally not be widened or improved to encourage additional traffic.

About 7.2 miles of secondary thoroughfares may require openings or widenings. Much of this right-of-way will be dedicated incidental to subdivision. It is estimated that only about one mile may require condemnation.

Explanation of the Map

Secondary thoroughfares are shown on the opposite page by means of solid red lines. Those portions of the system where new openings are proposed are indicated by means of broken lines. Dotted lines represent interim thoroughfares whose future status in the thoroughfare system will be determined by the need when the expressway system is in operation.

RAILROAD GRADE SEPARATIONS *Trafficways*

Objectives and Principles of Location

Railroad grade separations in the trafficways plan are located primarily to improve the flow of traffic and eliminate delays. While they serve incidentally to remove hazards to safety, the safety factor is not the primary criterion in location or determination. Where safety is the only consideration, it can frequently be achieved almost as well and much more cheaply by means of modern control devices, or by street closings.

The expressways designed for uninterrupted flow of traffic will all be constructed with grades separated both for rail and street crossing. For this reason grade separations proposed as part of the expressway system are not shown in the plan, although grade separations for major thoroughfares bordering expressways are included.

The grade separation plan deals with additional separations necessary for the thoroughfare system. Grade separations are considered necessary under the following conditions:

1. At crossings of all major thoroughfares and main line railroads. Service drives along expressways where they serve as major thoroughfares are included in this category.
2. At crossings of six-lane major thoroughfares and belt line railroads.
3. At crossings of four-lane major thoroughfares and belt line railroads where the congestion ratio is high due to volume of traffic and frequency of train movements.
4. At secondary thoroughfare crossings with high congestion ratings.

By confining grade separation structures to a few designated thoroughfare crossings, most local street crossings can be closed in keeping with neighborhood plans. The remainder can be safeguarded by gate and warning devices at a fraction of the cost of separations.

The grade separation plan based on these criteria calls for 51 separations on major thoroughfares and two separations on secondary thoroughfares.

Explanation of the Map

Existing grade separations are indicated by solid red circles. Locations of proposed grade separations are shown by light red circles. The map does not show existing grade separations for streets which are not part of the system of major and secondary thoroughfares.

MOTOR FREIGHT TERMINALS *Transportation*

Objectives of the Plan

The plan for motor freight terminals is intended to show areas in which operators of motor freight lines should locate future terminals with advantage both to themselves and the city.

The motor freight industry has grown rapidly over the past two decades and is still in relatively widespread ownership.

Although many of these terminals have located in the southwestern part of the city, others are in widely scattered locations. This industry, where it is scattered and encroaches into residential neighborhoods, has created the following conditions which are detrimental to the city:

1. Large trucks move through narrow residential streets creating both congestion and hazard.
2. Trucks frequently park and load on streets and sidewalks.
3. Cross-haul between scattered terminals creates additional traffic which could be reduced by more efficient locating and centralizing of terminals.

To minimize these conditions the plan recommends concentration of terminals in three locations which meet the following requirements:

1. Close to major freight pickup and delivery areas.
2. Close to other media of freight transportation for interchange.
3. Accessible to future expressways or thoroughfares which lead as directly as possible from the terminals to points of entry or exit from the city.

Concentration in three terminal areas would permit operators to eliminate a vast amount of short cross-haul traffic and to exploit profitable long line-hauls to the full.

The terminal areas selected also meet the needs of independent or co-operating lines to find sites suitable for terminal buildings. A typical modern terminal may have 100 backup spaces and handle 1000 tons of cargo daily. A site for such a terminal would contain space for loading, parking and offices. These functions can be accommodated in an eight acre site 300 feet by 1160 feet. Since the land for such terminals must be available at reasonable cost, the plan designates three general terminal areas containing vacant parcels suitable for terminal development.

Location and Extent of Motor Freight Terminal Areas

Area No. 1—south of Michigan between Sixth and Twentieth Streets; contain approximately 380 acres for motor freight terminal use. Its principal features are:

It is directly in the path of major traffic flow from the southwest and west, and is accessible from Michigan, Fort, Twelfth and the proposed Lodge and Vernor Expressways.

It is close to the central business district and within the area with the highest volume of pickup and delivery service.

It is close to water and rail transportation.

It already contains many major freight terminals.

Area No. 2—lying between Russell and St. Aubin in the Milwaukee Junction industrial area; contains approximately 210 acres. It has the following advantages:

It lies at the crossing of major north and west traffic routes on the east side, and is accessible from major thoroughfares and the proposed Ford and Hastings-Oakland Expressways.

It is in the geographic center of the east side pickup and delivery area.

It is near existing terminals in residential districts which will ultimately require relocation.

Area No. 3—in the vicinity of Wyoming and Michigan; containing approximately 450 acres. It is a desirable location because:

It is convenient to heavy traffic from the southwest, west and east, and is accessible from major thoroughfares and the Edsel Ford Expressway.

It is close to a pickup and delivery area with a high volume of freight.

It is a convenient location for classification and interchange of traffic entering the city.

It already contains many major motor freight terminals.

Explanation of the Map

Heavily shaded areas on the accompanying map show three general areas in which motor freight terminals can advantageously be located. These sites are in industrial areas on the land use plan. The map is not intended to suggest that the whole area is available or needed for terminal purposes, but that parcels of land suitable for terminals are located within these areas.